

Chemicals, Metals, and Pesticides Pits

Background

The Chemicals, Metals, and Pesticides (CMP) Pits Operable Unit (OU) is located in the central portion of the Savannah River Site (SRS), approximately 5,200 feet north of L Reactor.

The CMP Pits consist of seven unlined pits that occupy the top of a knoll at an elevation of 310 feet above mean sea level. The pits were constructed in 1971 to dispose of solvents, pesticides, and lighting ballast components; they received waste until 1979. In 1984, the contents were excavated, the pits were backfilled, and an infiltration cover was installed. When the drums were excavated, an area to the northwest of the pits, now referred to as the ballast area, was used for material staging. A maintenance action was conducted in 1996 to minimize erosion by placing 6 inches of soil over the ballast area, thus improving perimeter drainage and the erosion control. Remediation of the residual subsurface solvent contamination in the vadose zone beneath the pits began in 2000 with the deployment of a soil vapor extraction (SVE) system.

The CMP Pits OU consists of five subunits:

- CMP Pits and associated vadose zone (Field A)
- Ballast area soils
- Vadose zone (Field B)
- Groundwater
- Surface water

Environmental Concerns

Groundwater monitoring data has indicated the presence of volatile organic compounds (VOCs), primarily trichloroethylene (TCE), tetrachloroethylene (PCE), in the groundwater. Though there are no exceedances of the Maximum Contaminant Levels (MCLs) in the nearby Pen Branch system, the groundwater plumes remain a concern.

Results of the soil gas survey indicated the soils near or beneath the pits contained TCE and PCE. In addition, the ballast area was found to be contaminated with pesticides and polychlorinated biphenyls (PCBs) in the surface soils.

Environmental Actions and Plans

In 1984, the contents of the CMP Pits were removed; the pits were backfilled; and a 1- to 2-foot drainage ditch was excavated around the entire site and lined with gravel.

During characterization activities in 1995, fluorescent lighting ballasts were observed on the ground in the ballast area.

In 1996, SRS submitted the Resource Conservation and Recovery Act (RCRA) Facility Investigation/Remediation Investigation (RFI/RI), Baseline Risk Assessment (BRA), and the Corrective Measures Study/Feasibility Study (CMS/FS) to the United States Environmental Protection Agency and the South Carolina Department of Health and Environmental Control for approval. Based on comments from the regulatory agencies on the RFI/RI/BRA and CMS/FS, additional characterization of the unit was initiated. This characterization included collection of soil, soil gas, groundwater and surface water data. New data identified several data gaps and caused significant changes in the understanding of the unit.

In 1999, an Interim Action Record of Decision (IROD) was issued, and an interim remedial action was initiated. Since that time, two amendments to the IROD have been issued addressing the contamination in the ballast area, the vadose zone under the pits, and in the groundwater.

Based on the results of a two-phase treatability study, the second IROD amendment specified enhanced bioremediation of the soil and land use controls to ensure protection of the safety and health of the public and the environment.

Due to the high concentrations of VOCs detected in the vadose zone, the IROD specified Soil Vapor Extraction (SVE) for the vadose zone under the pit area.

The groundwater at the CMP Pits OU is impacted by VOCs leaching from the vadose zone beneath the pits. The contaminated groundwater plume extends from the pit areas to Pen Branch. The interim action specifies treating the groundwater contamination near the pits with an air sparge and SVE. Because of the drought conditions in the recent past, the groundwater fell to levels that made air sparging not feasible. A second SVE system (active, followed by passive) has been installed and is operating to remove the VOCs in the vadose zone.

Currently, water in Pen Branch has not been impacted by this OU; however, protection of the surface water will be a consideration in the selection of a final remedy for groundwater.